Corvus Orca

The Corvus Orca ESS represented a shift in the maritime industry when launched in 2016. No other Energy Storage System can compete with the installation count of the Corvus Orca. Offering outstanding results and the highest level of safety, it set the new industry standard for maritime batteries.

Corvus Energy combined industry-leading research and development capabilities with its experience as the leading provider of marine ESS with the most installations worldwide to build the industry's safest, most reliable, high-performing and cost-effective ESS.

Applications

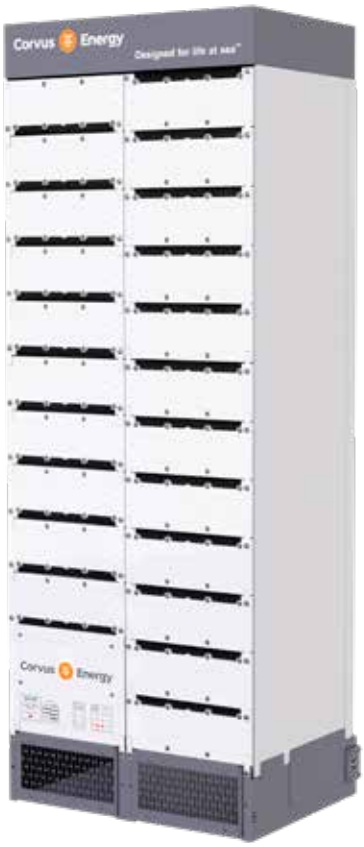
The Corvus Orca ESS is ideal for applications that need both energy and a high amount of power, moving large amounts of energy at an inexpensive lifetime cost per kWh.

Typical Vessel Types:

- Ferries
- Cruise ships
- Ro/Ro – Ro/Pax
- Yachts
- Offshore vessels
- Rigs
- Tugs
- Fishing vessels
- Merchant vessels
- Port cranes
- Shore charging
- Fish farms

Features

- High C-Rate – up to 3C continuous
- Installed on 700 vessels around the world
- Designed for voltages up to 1200 VDC
- Low installation and commissioning time
- Low life cycle cost
- Enhanced reliability with contained power connections
- Flexible and modularized design
- Passive single-cell Thermal Runaway protection
- Scalable capacity and voltage according to vessel requirements
- Industry-proven Battery Management System (BMS)
- Remote monitoring capabilities
- Enhanced EMI immunity design for maritime environments



Corvus Energy safety innovations

Passive Single-cell-level Thermal Runaway (TR) Isolation

- True cell-level thermal runaway isolation
- TR does not propagate to neighbouring cells
- Isolation NOT dependant on active cooling

Exceeds Class and Flag Standards for TR Gas Venting

- Integrated thermal runaway gas exhaust system
- Easily vented to external atmosphere

Technical Specifications | Corvus Orca ESS

Performance Specifications	
C-Rate - (Discharge / Charge)	Up to 3C / Up to 3C
System Specifications	
Battery Cell Chemistry	Lithium ion NMC / graphite
Single Module Size / Increments	5,6 kWh / 50 VDC
Single Module Capacity	128 Ah
Single Pack Range	38-136 kWh / 350-1200 VDC
Module Dimensions	590 x 420 x 163 mm (l x w x h)
Module Weight	60 kg
Max Gravimetric Density - **Pack**	77 Wh/kg | 13 kg/kWh
Max Volumetric Density - **Pack**	88 Wh/l
Safety Specifications	
Thermal Runaway Anti-Propagation	Passive cell-level thermal runaway isolation with exhaust gas system
Fire Suppression	Per SOLAS, class and Corvus recommendation
Disconnect Circuit	Hardware-based fail-safe-for over-temperature and over-voltage
Short Circuit Protection	Fuses included on pack level
Emergency Stop Circuit	Hard-wired
Ground fault Detection	Integrated
Disconnect switchgear rating	Full load
General Specifications	
Class Compliance	DNV, Lloyd's Register, Bureau Veritas, ABS, RINA
Type Approval	DNV, Bureau Veritas, ABS, RINA
Cyber Security Approval	DNV
Ingress Protection	System: IP44
Cooling	Forced air

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